BIOLOGICAL EVALUATION OF FOREST INSECT CONDITIONS ON THE CHALLIS NATIONAL FOREST DURING 1968

Prepared by: _____
J. A. E. Knopf
Boise Zone Entomologist, Section of Detection and Evaluation

Recommended by: _____
Marlin C. Galbraith
Chief, Division of Timber Management

Approved by: Floyd Iverson, Regional Forester

By _____ G. L. Watts

Forest Insect Conditions on the Challis National Forest 1968

Information for this report has been compiled from aerial and ground detection surveys and on-the-ground biological evaluations of specific infestation centers. Additionally, verbal and written reports from your staff materially aided in pinpointin potentially serious insect threats to timber resources.

Relatively low levels of forest insect activity were encountered on the Forest except in isolated areas during 1968. The Elk Mountain Sale continues to support heavy populations of Douglas-fir beetle. A new infestation of Douglas-fir beetle, considered to have epidemic potential, was detected in the imme iate area of the Yank e Fork-Salmon River confluence. Spruce budworm populations increased significantly from levels that were observed in 1967. fountain pine beetle activity on the Forest continued at low levels, and for the most part can be considered static.

DOUGLAS-FIR BEETLE - Dendroctonus pseudotsugae Hopk.

ain this year, Douglas-fir b etle attacks on the Forest were characterized by groups of thre to ten trees being killed in widely scattered locations. Several attac centers were found in Yankee Fork and feeder drainages above Sunbeam Dam. Also, new infestation centers were detected in Rankin and Ramey Cree s where numerous groups of thre to ten or more trees were killed. These areas have considerable amounts of Dou as-fir that will provide suitable host material if the infestation continues its upward trend. As you know, lo ing is the only practic method of com atin this st. The question of wheth r these areas could b s va lo ed for control is questionable as the slopes appear excessively steep.

The Elk Mountain Sale on the Stanley Rang r District remains a potential epidemic center. On-the-ground evaluations conducted this spring durin logging operations, revealed heavy populations of beetles filling into downed sawtimber. Although the merchantable material was removed this year, only part of the logging debris was burned in the fall. However, since additional harvesting operations are planned for 1969, new slash may attract emergin adults and reduce the possibility standing tree attacks. It is imperative that an effective program of slash disposal be carried out on a current year basis. Due to the thick bark of Douglas-fir and excess of heavy fu l type created by long butts, cull and swept logs, tractor piling is recommended. Past experience has shown t t broadcast burning cannot be consistently relied on to effectiv ly destroy beetle habitat in slash. Douglas-fir bark is quite thick and has excelle t insulative properties. If enou heat is not generated to totally consume the bark, the beetles can survive.

SPRUCE BUDWORM - Choristoneura fumiferana complex

For the past two years, budworm populations have declined on the Challis, Salmon, Payette, and Boise Forests. Favorable climatic conditions and

suspected reductions in the parasite-predator complex were responsible for a noticeable increase in defoliation intensity in Douglas-fir, true fir, and spruce this year. This resurgence of budworm activity was observed on all Forests in the Zone. The following table shows the history of budworm activity by year and acreage for the past seven years.

DEFOLIATION INTENSITY 1962-1968

Year	Light	Moderate	Heavy	Total
1962	150,000	74,000	73,000	297,000
1963	73,760	69,920	97,440	241,120
1964	79,000	132,000	243,000	454,000
1965	83,200	20,500	297,600	401,300
1966	162,100	7,000	--	169,100
1967	1,600	--	--	1,600
1968	33,280	--	--	33,280

The recent infestation has been grouped into four general areas. The 17,000-acre infestation in the vicinity of Scarface Mountain undoubtedly has been supported by the persistent, localized populations of the budworm across the Middle Fork of the Salmon River in Marble Creek. The persistent infestation directly north of Scarface Mountain varied greatly in defoliation intensity, but not in size.

Following is a breakdown of the 1968 budworm infestation on the Forest by area:

AREA AND ACREAGE INFESTED - 1968

General Area		Acreage
Meyers Cove		2,400
Loon Creek		13,560
Big Aparejo		360
Scarface Mountain		16,960
	Total	33,280*

* All defoliation was classified as light

Due to changes in work schedules and rearrangement of priorities, no egg mass surveys were conducted this year. In the past, population trends on neighboring Forests have been fairly reliable indic tors in predicting defoliation trends throughout the Salmon River budworm complex. Even though e mass samples indicated relatively low defoliation rates on the adjacent Salmon Forest (15-25 percent for 1969), the rapidity of change shown by this year's population indicates defoliation in excess of 25 percent for 1969.

MOUNTAIN PINE BEETLE - Dendroctonus ponderosae Hopk.

The persistent endemic infestation in lodgepole pine in Loon Creek, maintained a static condition through 1968. Aerial observation revealed approx tely 75 infested trees. A few 3- to 10-tree groups were detected on the Middle Fork of the Salmon River, near th Primitiv Area boundary. Two small infestatio s of 70 and 50 beetle-kill trees were observed in the upper portions of the East Fork of Mayfield Cree and Warm Springs Creek, respectively. They were heavily concentrated; but due to the inaccessibility of both locations, no biological evaluations were undertaken. Minimal, if any, chan es are expected in the intensity of the present infestations by the mountain pine b etle on the Challis this coming year.

Jerry A. E. Knopf

J. A. E. Knopf, Entomologist